

Serial No. 10/577,429
Amdt. dated May 6, 2009
Reply to Office Action of January 6, 2009

Docket No. P-0777

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled).
2. (Currently Amended) A method for controlling an operation of a compressor of a refrigerator, the method comprising:

varying a ~~cooling~~ compression capacity of a compressor installed in ~~a~~ the refrigerator by controlling a rotation direction of the compressor according to a load condition of the refrigerator, wherein the ~~cooling~~ compression capacity of the compressor increases when the compressor is rotated clockwise with respect to a rotational axis of the compressor and decreases when the compressor is rotated counterclockwise, and wherein the controlling the rotation direction of the compressor comprises:

performing a defrosting operation when a temperature inside the refrigerator and a pre-set defrosting temperature are identical; and

when the defrosting operation is terminated, rotating the compressor clockwise and repeatedly stopping and rotating the compressor counterclockwise at pre-set time periods.
3. (Canceled).

Serial No. **10/577,429**

Docket No. **P-0777**

Amdt. dated May 6, 2009

Reply to Office Action of January 6, 2009

4. (Currently Amended) The method of claim ~~3~~ 2, further comprising:

~~a step in which~~ when an operation mode of the refrigerator is selected by a user, selecting a rotation direction of the compressor ~~is selected~~ according to an amount of cooling air supply corresponding to the selected operation mode, and ~~the~~ controlling a rotation speed of the compressor in the selected rotation direction ~~is controlled~~ by varying an operation frequency of the compressor based on ~~the~~ a temperature inside the refrigerator.

5. (Currently Amended) The method of claim 4, further comprising:

~~a step in which~~ when the compressor is rotated clockwise according to the operation mode of the refrigerator, ~~a value of~~ detecting a current applied to the compressor ~~is detected~~, and if the detected current ~~value~~ is greater than a pre-set reference current ~~value~~, the compressor is continuously rotated clockwise, and if the detected current ~~value~~ is smaller than the reference current ~~value~~, the compressor is turned off; and

~~a step in which~~ when the compressor is rotated counterclockwise according to the operation mode of the refrigerator, if the detected current ~~value~~ is smaller than the pre-set reference current ~~value~~, the compressor is continuously rotated counterclockwise, and if the detected current ~~value~~ is greater than the pre-set reference current value, the compressor is turned off.

6. (Currently Amended) The method of claim 4, further comprising:

~~a step in which after sensing the rotation direction of the compressor is sensed;~~

and

if the rotation direction of the compressor needs to be changed according to a change of a temperature of the refrigerator, stopping the operation of the compressor ~~is stopped~~ for a predetermined time period and then changing the rotation direction of the compressor ~~is~~ changed.

7. (Currently Amended) The method of claim ~~3~~ 4, further comprising:

~~a step in which~~ when the operation mode of the refrigerator selected by the user is a power saving operation mode, the compressor is rotated counterclockwise, and then when the temperature inside the refrigerator is higher than a pre-set temperature, the compressor is rotated clockwise; and

~~a step in which~~ when the operation mode of the refrigerator selected by the user is a standard operation mode, the compressor is rotated clockwise, and then, when the temperature inside the refrigerator reaches the pre-set temperature, the compressor is rotated counterclockwise.

Serial No. 10/577,429

Docket No. P-0777

Amdt. dated May 6, 2009

Reply to Office Action of January 6, 2009

8. (Currently Amended) The method of claim 7, further comprising:

~~a step in which setting~~ an operation range of a temperature sensor ~~for sensing that~~
~~senses~~ the temperature inside the refrigerator ~~is set according to the rotation direction of the~~
compressor; and

~~sensing~~ the temperature inside the refrigerator ~~is sensed according to the set~~
operation range.

9. (Original) The method of claim 8, wherein when the compressor is rotated clockwise, the operation range of the temperature sensor is $-0.5^{\circ}\text{C}\sim+0.5^{\circ}\text{C}$.

10. (Original) The method of claim 8, wherein when the compressor is rotated counterclockwise, the operation range of the temperature sensor is $-0.3^{\circ}\text{C}\sim+0.3^{\circ}\text{C}$.

11. (Currently Amended) The method of claim 8, wherein ~~the~~ a refrigerant seal amount of the refrigerating cycle of the refrigerator is set as ~~the~~ an amount of a refrigerator of the compressor when the compressor is rotated counterclockwise.

12. (Currently Amended) The method of claim 8, wherein ~~the~~ a refrigerant seal amount of the refrigerating cycle of the refrigerator is calculated when a temperature of an evaporator ~~itself~~ of the refrigerator and a temperature of an entrance of the evaporator are

Serial No. 10/577,429

Docket No. P-0777

Amdt. dated May 6, 2009

Reply to Office Action of January 6, 2009

identical while the compressor is being rotated counterclockwise, and the calculated refrigerant seal-amount is set as a refrigerant seal-amount of the compressor.

13-16. (Canceled).

17. (Currently Amended) ~~The method claim 2~~ A method for controlling an operation of a compressor of a refrigerator, the method comprising:

varying a compression capacity of a compressor installed in the refrigerator by controlling a rotation direction of the compressor according to a load condition of the refrigerator, wherein the compression capacity of the compressor increases when the compressor is rotated clockwise with respect to a rotational axis of the compressor and decreases when the compressor is rotated counterclockwise, wherein the step of controlling the rotation direction of the compressor comprises:

~~a step in which~~ when a door of the refrigerator is closed, sensing a first temperature inside the refrigerator ~~is sensed~~;

~~a step in which~~ after a pre-set time period elapses, sensing a second temperature inside the refrigerator ~~is sensed~~;

~~a step in which~~ when a difference between the first and second temperatures is not lower than a pre-set reference temperature, rotating the compressor ~~is rotated~~ clockwise; and

~~a step in which~~ when the difference between the first and second temperatures is lower than the pre-set reference temperature, rotating the compressor ~~is rotated~~ counterclockwise.

18. (Original) The method of claim 17, wherein the pre-set reference temperature is 3°C.

19. (Currently Amended) ~~The method of claim 2~~ A method for controlling an operation of a compressor of a refrigerator, the method comprising:
varying a compression capacity of a compressor installed in the refrigerator by controlling a rotation direction of the compressor according to a load condition of the refrigerator, wherein the compression capacity of the compressor increases when the compressor is rotated clockwise with respect to a rotational axis of the compressor and decreases when the compressor is rotated counterclockwise, wherein the step of controlling the rotation direction of the compressor comprises:

~~a step in which~~ when a power supplied to the refrigerator is cut off beyond a predetermined time period and then re-supplied, the compressor is rotated clockwise; and

~~a step in which~~ when ~~which~~ when the power supplied to the refrigerator is cut off within ~~a~~ the predetermined time period and then re-supplied, the compressor is rotated in the same direction as a direction of the compressor before power is cut off.

Serial No. 10/577,429

Docket No. P-0777

Amdt. dated May 6, 2009

Reply to Office Action of January 6, 2009

20. (Currently Amended) The method of claim 19, wherein the predetermined time period is 7~100 minutes.

21. (Currently Amended) ~~The method of claim 2~~ A method for controlling an operation of a compressor of a refrigerator, the method comprising:

varying a compression capacity of a compressor installed in the refrigerator by controlling a rotation direction of the compressor according to a load condition of the refrigerator, wherein the compression capacity of the compressor increases when the compressor is rotated clockwise with respect to a rotational axis of the compressor and decreases when the compressor is rotated counterclockwise, wherein the step of controlling the rotation direction of the compressor comprises:

a step in which it is detected determining whether a rotation direction of a rotation direction select signal for rotating that rotates the compressor and an actual rotation direction of the compressor are identical according to the a temperature inside the refrigerator; and

a step in which if the rotation direction of the rotation direction select signal and the actual direction of the compressor are different, rotating the compressor is rotated in a direction opposite to the rotation direction of the rotation direction select signal.

22. (Currently Amended) The method of claim 21, wherein ~~in the step of rotating the compressor in the opposite direction~~ when the rotation direction of the rotation direction

Serial No. 10/577,429

Docket No. P-0777

Amdt. dated May 6, 2009

Reply to Office Action of January 6, 2009

~~select signal and the actual rotation direction of the compressor are different~~[[,]]comprises
rotating the compressor is rotated at least one time in the direction opposite to the rotation
direction of the rotation direction select signal.

23. (Currently Amended) The method of claim 21, further comprising:

~~a step in which if the rotation direction of the rotation direction select signal and~~
~~the actual direction of the compressor are the same, rotating the compressor is rotated according~~
~~to the rotation direction select signal.~~

24. (Currently Amended) The method of claim 21, wherein the actual rotation
direction of the compressor is sensed through a at least one rotation direction sensor installed at
the compressor and wherein the at least one rotation direction sensor generates a first signal or a
second signal according to the rotation direction of the compressor.

25. (Currently Amended) ~~The method of claim 2~~ A method for controlling an
operation of a compressor of a refrigerator, the method comprising:

varying a compression capacity of a compressor installed in the refrigerator by
controlling a rotation direction of the compressor according to a load condition of the
refrigerator, wherein the compression capacity of the compressor increases when the compressor
is rotated clockwise with respect to a rotational axis of the compressor and decreases when the

Serial No. 10/577,429

Docket No. P-0777

Amdt. dated May 6, 2009

Reply to Office Action of January 6, 2009

compressor is rotated counterclockwise, wherein the ~~step of controlling the rotation direction of~~
the compressor comprises:

~~a step in which rotating~~ the compressor of the refrigerator ~~is rotated~~ clockwise
during a pre-set time period; and

~~a step in which when the pre-set time~~ period ~~elapses, rotating~~ the compressor ~~is~~
~~rotated~~ counterclockwise.

26. (Currently Amended) The method of claim 25, wherein the pre-set time period is
a time period during which ~~the a~~ temperature inside the refrigerator reaches near ~~the a~~
temperature set by ~~the a~~ user.

27. (Canceled).

28. (Currently Amended) The method of claim ~~27~~ 26, wherein if the temperature
inside the refrigerator does not reach the temperature set by the user, the compressor is rotated
counterclockwise at ~~every pre-set~~ time period periods.

29-35. (Canceled).